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- Kerr effect in the critical solutions of decyl alcohol, W. Pyżuk, H. Majgier-Baranowska and J. Zioło 59 (1981) 111

MATERIALS RESEARCH SOCIETY PROCEEDINGS, Volume 3

Nuclear and Electron Resonance Spectroscopies Applied to Materials Science

Proceedings of the Symposium on Nuclear and Electron Resonance Spectroscopies Applied to Materials Science, Boston, Mass., U.S.A., 16-20 November, 1980

edited by E. N. KAUFMANN, *Bell Laboratories, Murray Hill N.J., U.S.A.* and
G. K. SHENOY, *Argonne National Laboratory, Argonne, Illinois, U.S.A.*

1981. 576 pages. In the U.S.A. and Canada: US \$65.00

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ISBN 0-444-00587-8

This volume covers the complete range of capabilities of the diagnostic powers of the resonance methods from several points of view. The "microview" provided by the resonance methods is complementary to other diagnostic techniques employed by materials scientists. The work will be of value to chemists, physicists, ceramists, materials scientists and research managers concerned with glasses, amorphous metals, radiation damage, defects and gases in materials, ion implantation, coal, hydrides, semiconductors, superconductors, superionic conductors, anisotropic conductors, catalysts, and alloys.

CONTENTS: INVITED PAPERS: Parts: Nuclear Resonance. Nuclear Magnetic Resonance in Alloys (*L. H. Bennett*). Hydrides Examined by Nuclear Magnetic Resonance (*R. G. Barnes*). Nuclear Magnetic Resonance Studies of Type II Superconductors (*F. Y. Fradin*). Magnetic Resonance as a Probe of Anisotropic Conductors (*W. G. Clark*). NMR Techniques for Studying Ionic Diffusion in Solids (*D. C. Ailion*). **Electron Resonance.** Electron Paramagnetic Resonance of Material Properties and Processes (*K. L. Brower*). Electron Spin Resonance Studies of Amorphous Silicon (*D. K. Biegelsen*). Defects in III-V Semiconductors Studied Through EPR (*T. A. Kennedy*). ESR Studies in Amorphous Insulators (*D. L. Griscom*). Catalysts Examined by Electron Spin Resonance-Examples from Hydrodesulfurization Catalysts (*B. G. Silbernagel*). **Mössbauer Effect.** The Mössbauer Effect and Some Applications in Materials Research (*G. K. Shenoy*). Mössbauer Studies of Ion Implanted Alloys (*G. Longworth*). Mössbauer Spectroscopy Studies of Amorphous Metallic Solids (*C. L. Chien*). Coal and the Mössbauer Effect (*P. A. Montano*). **Spin Precession.** Some Applications of Spin Precession Methods to Problems in Materials Science (*E. N. Kaufmann*). Hyperfine Interaction Investigations of Helium Trapping in Metals (*H. De Waard*). Defects in Metals - Detected by Spin Precession Methods (*Th. Wichert and E. Recknagel*). Muons as Light Hydrogen Probes-Diffusion and Trapping (*D. Richter*). **48. CONTRIBUTED PAPERS in the following subject areas: Energy Materials:** Catalysis and Coal; Novel Conductors; Hydrides. **Semiconductors.** **Metals and Alloys:** Defects; Magnetic Materials. **Insulators and Compounds.** **Technique and Theory.** Author Index. Subject Index.

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Superionic Solids

Principles and Applications

by SURESH CHANDRA, *Banaras Hindu University, Varanasi, India*

1981 xiv + 388 pages Price: US \$78.00/Dfl. 160.00 ISBN 0-444-86039-8

Superionic Solids (or Solid Electrolytes) are recently discovered materials which have a high level of ionic conduction. This book presents a comprehensive overview of the subject, intelligible to new researchers and useful to specialists. An extensive list of superionic materials and their properties is given, and special structural and theoretical principles responsible for high ionic conduction are discussed.

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Also of Interest:

Solid State Ionics

Scope:

This interdisciplinary journal is devoted to physics, chemistry and materials science of ion transport phenomena in solids and properties resulting from ion mobility. The major part of each issue contains papers on such topics as physics and chemistry of defects; ionic transport measurements and mechanisms; theories of ion transport; incorporation of ions into electronic conductors; many aspects of solid state electro-chemistry/physics including interfacial properties; processes such as corrosion oxidation, sintering and other solid state reactions. Related technological applications such as batteries, fuel cells, electrochromic displays, solid state chemical sensors, hydrogen storage materials, catalysis, photography, electrolysis cells, metal winning, etc., are also included, provided that the performance characteristics are interpreted in terms of the relevant ionic transport processes. Review papers and relevant symposium proceedings are welcomed.

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